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What is claimed is:

- 1. A method for allocating a dedicated channel for transmitting a packet at a code division multiple access (CDMA) media access control (MAC) layer control unit to transmit a packet data between a mobile station (MS) and a base station (BS) in a CDMA mobile communication system including the MS and the BS, the method comprising the steps of:
- a) when the packet is generated, by a MAC layer control unit of the MS, determining a service option of the packet;
- b) if the service option of the packet is link-oriented, by the MAC layer control unit of the MS, requesting to allocate a dedicated control channel (DCCH) and receiving the DCCH;
- c) by the MAC layer control unit of the MS, requesting to allocate a dedicated traffic channel (DTCH) and receiving the DTCH; and
- d) by the MAC layer control unit of the MS, transmitting the packet via the DTCH.
 - 2. The method as recited in claim 1, wherein the MAC layer control unit of the MS is transited to a suspended state, before determining the service option of the packet.

3. The method as recited in claim 1, wherein the MAC layer control unit of the MS requests a MAC layer control unit

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of the BS to allocate the DCCH.

- 4. The method as recited in claim 1, wherein the step c) includes the steps of:
- 5 c1) if the DCCH is allocated before a suspended state timer is expired, transiting the MAC layer control unit of the MS to a control hold state; and
 - c2) requesting the MAC layer control unit of the BS to allocate the DTCH.
 - 5. The method as recited in claim 1, wherein the step d) includes the step of:
 - d1) if the DTCH is allocated before a control hold state timer is expired, transiting the MAC layer control unit of the MS to an active state before transmitting the packet via the DTCH;
 - d2) transmitting the packet, before an active state timer is expired; and
- d3) after the active state timer is expired, transiting
 20 the MAC layer control unit of the MS to the control hold state.
 - 6. The method as recited in claim 1, wherein step b) further includes the step of:
- e) if the service option of the packet is unlink-oriented,
 25 transmitting the packet via a common traffic channel (CTCH)
 that is randomly connected to.

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- 7. The method as recited 5, wherein step d) further includes the step of:
- d4) if the DTCH is not allocated before a control hold state timer is expired, transiting the MAC layer control unit of the MS to the suspended state or back to the control hold state.
- 8. The method as recited claim 7, wherein a probability of transiting to the suspended state equals $(1-\mu_D)/T_C$ and a probability of transiting back to the control hold state equals $(1-\mu_D)(1-(1/T_C))$ where the μ_D denotes a request rate of the DTCH and T_C denotes a control hold state timer value.
- 9. The method as recited in claim 4, wherein step c) further includes the step of:
- d3) if the DCCH is not allocated before a suspended state timer is expired, transiting the MAC layer control unit of the MS to a dormant state or back to the suspended state.
- 20 10. The method as recited in claim 9, wherein a probability of transiting to the dormant state equals (1- λ_D)/Ts and a probability of transiting back to the suspended state equals $(1-\lambda_D)$ $(1-(1/T_S))$ where the λ_D denotes a request rate of the DCCH and Ts denotes a suspended state timer value.

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